the angle of the jaw on CT or MR are at risk for cranial nerve injury during resection.

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RR12. CT Angiography-Derived Duplex Ultrasound Velocity Criteria in Patients with Carotid Artery Stenosis

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Objectives: Widely used carotid duplex ultrasound (DUS) velocity criteria (VC) to determine percent stenosis, and consequential benefit of carotid endarterectomy, are based on conventional angiography. DUS VC have not been developed with the use of CT angiography (CTA) derived measurements. The objective was to determine optimal carotid DUS VC from CTA-derived measurements with the NASCET method for 50 and 80% stenosis.

Methods: A retrospective review of all patients who underwent carotid DUS and CTA from 2000 - 2009 was performed. Vessel diameters were made on CTA and DUS velocities recorded. Percent stenosis was calculated using the NASCET method. Receiver operating characteristic (ROC) curves were generated for internal carotid artery (ICA) peak systolic velocity (PSV), ICA end diastolic velocity (EDV), and ICA PSV to common carotid artery PSV ratio (PSVR) for 50 and 80% stenosis. Velocity cutpoints were determined with equal weighting of sensitivity and specificity.

Results: A total of 610 vessels were analyzed to create the ROC curves (Table). For 50% stenosis analysis yielded ideal cutpoints for PSV, EDV, and PSVR of 130 cm/sec, 42 cm/sec, and 1.75. For 80% stenosis analysis yielded ideal cutpoints for PSV, EDV, and PSVR of 297 cm/sec, 84 cm/sec, and 3.06.

Conclusions: CTA-derived DUS velocity criteria appear to be reliable in defining 50% and 80% stenosis in patients with carotid artery stenosis. The carotid DUS VC defined in this study is different than either the Zwieble or Standness criteria for the same percent stenosis.

Table.

	AUC (SE)	*95% confidence interval*	*Velocity criteria*	*Sensitivity (%)*	*Specificity (%)*
> 50% PSV	0.926 (0.012)	0.904-0.949	≥ 130 cm/sec	87.9	84.3
> 50% EDV	0.884 (0.016)	0.852-0.916	≥ 42 cm/sec	81.1	84.7
> 50% ICA/CCA PSV ratio	0.924 (0.012)	0.902-0.947	≥ 1.75	87.4	85.8
> 80% PSV	0.946 (0.010)	0.925-0.966	≥ 297 cm/sec	88.9	88.4
> 80% EDV	0.954 (0.013)	0.929-0.979	≥ 84 cm/sec	93.3	88.4
> 80% ICA/CCA PSV ratio	0.913 (0.022)	0.869-0.957	≥ 3.06	93.3	84.6

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RR13.

Statin Therapy after Infrainguinal Bypass Surgery for Critical Limb Ischemia Is Associated with Improved Five-Year Survival

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Objectives: While statin therapy has been linked to fewer short-term complications after lower extremity bypass (LEB), its effect on long-term survival in such patients is uncertain. Therefore, we examined associations between statin use and long-term mortality after LEB.

Methods: We used the Vascular Study Group of New England registry to study 2,067 patients (71% male, mean age 67 yrs, 67% with CLI) who underwent infrainguinal bypass from 2003 - 2011. Of these, 1,537 (74%) were on statins peri-operatively and at 1-yr follow-up, while 530 received no statin. We examined crude, adjusted and propensity-matched 5-yr survival (via Social Security Death Index), and 1-yr amputation and graft occlusion rates.

Results: Patients on statins had more coronary disease (38% vs 22%, $P < .001$), diabetes (51% vs 36%, $P < .001$), hypertension (89% vs 77%, $P < .001$) and prior revascularization procedures (50% vs 38%, $P < .001$). Despite higher comorbidity burdens, long-term survival was better for patients on statins in crude (RR=0.7, $P < .001$), adjusted (HR=0.7, $P = .001$) and propensity- matched analyses (HR=0.7, $P = .03$, Fig). In subgroup analysis, a survival advantage was evident in patients with CLI, but not claudication. Statin therapy did not affect 1-yr rates of major amputation (12% vs 11%, $P = .84$) or graft occlusion (20% vs 18%, $P = .58$) in CLI patients.